IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): A method of placing pilot symbols in a data stream for telecommunication systems, wherein the pilot symbols are ~~spaced~~ distributed in time using a range of different intervals between symbols.

Claim 2 (Original): A method in accordance with claim 1, wherein the distribution of pilot symbols in time is substantially fractal in nature.

Claim 3 (Original) A method in accordance with claim 2, wherein the distribution of pilot symbols involves repetitions of irregular groupings of pilot symbols in the data stream.

Claim 4 (Original) A method in accordance with claim 3, wherein said irregular groupings of pilot symbols are irregularly spaced in the data stream.

Claim 5 (Currently Amended) The method of ~~any preceding~~ claim **4**, wherein the data stream ~~comprising~~ comprises a data packet, and wherein the pilot symbols are placed with irregular spacing within a first level group (L0 level), the irregular spacing is repeated in a plurality of such L0 groups, and the L0 groups are placed with irregular spacing within a second level group (L1 level).

Claim 6 (Original) The method of claim 5, wherein the irregular spacing between the L0 groups is repeated in a plurality of L1 groups across the data packet, and the Ll groups are placed with irregular spacing within a third level group (L2 level).

Claim 7 (Currently Amended) The method of claim 6, wherein each L0 ~~groups~~ group has length A, each L1 group each has length B, and the L2 group has length C, the pilot symbol distribution selected such that the ratio A:B is approximately equal to the ratio B:C.

Claim 8 (Currently Amended) The method of ~~any preceding~~ claim **7**, wherein the pilot symbols extend across substantially the entirety of the data packet.

Claim 9 (Currently Amended) ~~A~~ **The** method in accordance with ~~any preceding~~ claim **8**, wherein the spacing of the pilot symbols is decided in accordance with a mathematical relationship, such that their positions are substantially predictable, but sufficiently unevenly spaced to improve the ratio of the pilot symbol spectrum corresponding to the most likely frequency to that of the next most likely frequency, when compared with that available from an equivalent data stream containing evenly spaced pilot symbols.

Claim 10 (Currently Amended) A signal processing device for use in a communications system for generating a data stream for telecommunication systems, the signal processing device configured**, wherein pilot symbols are spaced in time using a range of different intervals between symbols** ~~to implement the method of any preceding claim~~.

Claim 11 (Currently Amended) A receiver method for receiving and acquiring a transmitted signal in a communications system, the signal representing a data stream including data symbols and pilot symbols, the method including the steps of:

receiving the transmitted signal and converting to a digital signal;

~~iteratively~~ acquiring **by iteration** the frequency of the signal by the following steps:

~~based on an assumed zero phase difference between certain relatively closely spaced pilot symbols within the data stream,~~ calculating a first estimate of phase and signal amplitude **based on an assumed zero phase difference between certain relatively closely spaced pilot symbols within the data stream**;

calculating a relatively fine frequency estimate with potential aliasing ambiguity~~,~~ based on more widely spaced pilot symbols within the data stream;

using said relatively fine frequency estimate to calculate a phase difference between said relatively closely spaced pilot symbols, and calculating a relatively coarse frequency estimate based on this phase difference, with no aliasing ambiguity;

using the calculated relatively coarse frequency estimate to enhance the relatively fine frequency estimate by refining said calculated phase and signal amplitude, and thus re-calculating said relatively fine frequency estimate;

using said relatively coarse frequency estimate and the enhanced relatively fine frequency estimate to resolve potential aliasing ambiguity in the relatively fine frequency estimate; and

applying the enhanced relatively fine frequency estimate to the data stream in the acquisition of the data symbols.

Claim 12 (Original) A receiver method for receiving and acquiring a transmitted signal in a communications system, the signal representing a data stream including data symbols and pilot symbols, the method including the steps of:

receiving the transmitted signal and converting to a digital signal;

acquiring the frequency of the signal by the following steps:

a) a medium frequency estimation step;

b) a coarse frequency estimation step based on the result of step (a);

c) a medium frequency re-estimation step based on the result of step (b);

d) an adjustment to the medium frequency estimation to resolve potential aliasing ambiguities in the medium frequency estimation;

e) a fine frequency estimation step, including a calculation of a likelihood for the selected frequency;

f) an adjustment to the fine frequency estimation to resolve potential aliasing ambiguities in the fine frequency estimation.

Claim 13 (Original) The receiver method of claim 12, including the further step of:

g) a phase and signal estimation and correction step based on the result of step (f).

Claim 14 (Original) The receiver method of claim 13, including the further step of:

h) the removal of the pilot symbol from the data stream to provide a data symbol output.

Claim 15 (Original) The receiver method of claim 13, including the further step of variance estimation.

Claim 16 (Currently Amended) The receiver method of ~~any one of~~ claim~~s 11 to~~ 15, including a process for further improving the reliability of acquisition by using additional encoded pilot symbols embedded within the data stream, the additional pilot symbols encoded with forward error correcting codes; the process including the steps in the receiver of:

i) acquiring a list of the most probable time and frequency offset pairs ranked in order of probability;

ii) ~~for each said time and frequency offset pair in the list,~~ starting with ~~that with~~ the highest probability, and proceeding in order of decreasing probability **for each said time and frequency offset pair in the list**:

decoding the packet on the basis of ~~that~~ **the** time and frequency offset;

~~if a predetermined number of said additional encoded pilot symbols match their prescribed values,~~ accepting ~~that~~ **the** time and frequency offset **if a predetermined number of said additional encoded pilot symbols match their prescribed values**;

~~if not,~~ continuing to the next time and frequency offset pair in the list **if the predetermined number of said additional encoded symbols do not match their prescribed values**.

Claim 17 (Currently Amended) The receiver method of ~~any one of~~ claims ~~11 to~~ 16, ~~applied to a transmitted signal produced by the method of any one of claims 1 to 10~~ **wherein the pilot symbols are spaced in time using a range of different intervals between symbols**

Claim 18 (Original) The receiver method of claim 17, enhanced for greater data transmission efficiency, wherein in the data stream selected one or more of the pilot symbols are replaced with data symbols, and the acquisition steps are applied based on the assumption that these selected symbols are pilot symbols with zero value.

Claim 19 (Currently Amended) A receiver for receiving and acquiring transmitted signals in a communications system, the signals representing a data stream including data symbols and pilot symbols, the receiver including:

a functional block for receiving the transmitted signal and converting to a digital signal;

a functional block for iteratively acquiring the frequency of the signal, comprising:

a functional block for **calculating a first estimate of phase and signal amplitude**~~,~~ based on an assumed zero phase difference between certain relatively closely spaced pilot symbols within the data stream~~, calculating a first estimate of phase and signal amplitude~~;

a functional block for calculating a relatively fine frequency estimate with potential aliasing ambiguity, based on more widely spaced pilot symbols within the data stream;s

a functional block for using said relatively fine frequency estimate to calculate a phase difference between said relatively closely spaced pilot symbols, and calculating a relatively coarse frequency estimate based on this phase difference, with no aliasing ambiguity;

a functional block for using the calculated relatively coarse frequency estimate to enhance the relatively fine frequency estimate by refining said calculated phase and signal amplitude, and thus re-calculating said relatively fine frequency estimate;

a functional block for using said relatively coarse frequency estimate and the enhanced relatively fine frequency estimate to resolve potential aliasing ambiguity in the relatively fine frequency estimate; and

a functional block for applying the enhanced relatively fine frequency estimate to the data stream in the acquisition of the data symbols.

Claim 20 (Original) A receiver for receiving and acquiring transmitted, signals in a communications system, the signals representing a data stream including data symbols and pilot symbols, the receiver including:

a functional block for receiving the transmitted signal and converting to a digital signal;

a functional block for acquiring the frequency of the signal, including:

a) a functional block for carrying out a medium frequency estimation step;

b) a functional block for carrying out a coarse frequency estimation step based on the result of step (a);

c) a functional block for carrying out a medium frequency re-estimation step based on the result of step (b);

d) a functional block for carrying out an adjustment to the medium frequency estimation to resolve potential aliasing ambiguities in the medium frequency estimation;

e) a functional block for carrying out a fine frequency estimation step, including a calculation of a likelihood for the selected frequency;

f) a functional block for carrying out an adjustment to the fine frequency estimation to resolve potential aliasing ambiguities in the fine frequency estimation.